

Abstract

[0070] Systems and methods for performing source separation are provided. Source separation is performed using a composite signal and a signal dictionary. The composite signal is a mixture of sources received by a sensor. The signal dictionary is a database of filtered basis functions that are formed by the application of directional filters. The directional filters approximate how a particular source will be received by the sensor when the source originates from a particular location. Each source can be characterized by a coefficient and a filtered basis function. The coefficients are unknown when the sources are received by the sensor, but can be estimated using the composite signal and the signal dictionary. Various ones of the sources may be selectively reconstructed or separated using the estimated value of the coefficients.